PCE Chestnut Site
Atlantic, Iowa

Susan Fisher
EPA Region 7
Project Manager

Introductions

Susan Fisher	**On-Scene Coordinator**
Ann Jacobs	**Risk Assessor**
Dan Nicoski	**Hydrogeologist**
Demetra Salisbury	**Site Attorney**
Pamela Houston	**Community Engagement Specialist**
Erin Harman	**Environmental Health Specialist**

What is a Superfund Site?

- Superfund is the name given to the environmental program established to address abandoned hazardous waste sites that possibly affect local ecosystems or people.

- It is also the name of the fund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

- Over the past 20+ years, Superfund has located and analyzed tens of thousands of hazardous waste sites, protected people and the environment from contamination at the worst sites, and involved states, local communities, and other partners in the cleanup process.

- http://www.epa.gov/superfund/about.htm

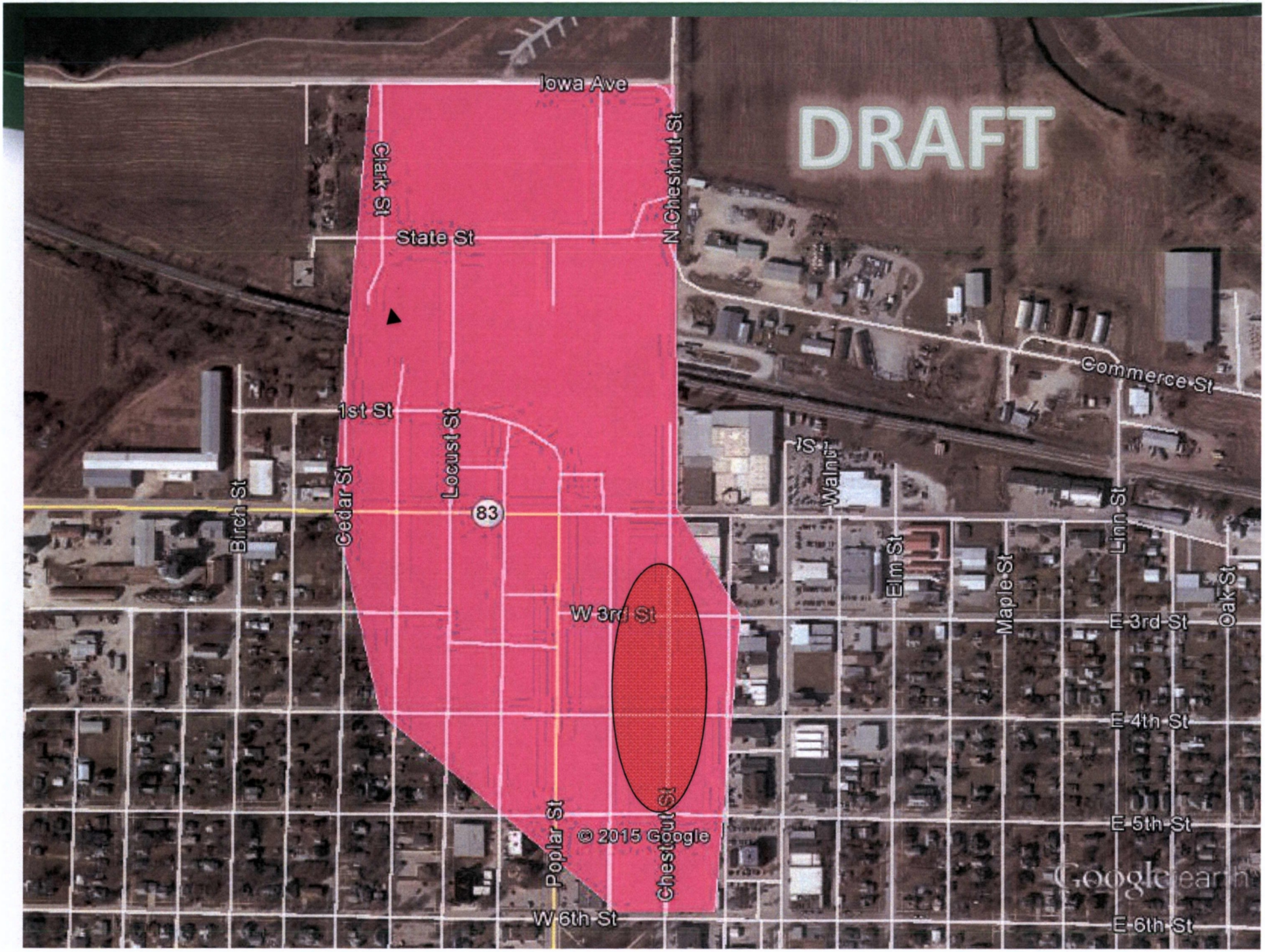
Site History

- 2015: Tetrachloroethylene (PCE) was detected in groundwater during a PCE Former Dry Cleaners Site investigation.

- Evidence of additional historical dry cleaning operations along Chestnut Street.

- Several buildings along Chestnut street were sampled for vapor intrusion. Analytical results show PCE vapor above levels of health concerns.

- Vapor mitigation systems were installed in three locations.


DRAFT
Iowa Ave
Clark St
N Chestnut St
State St
Commerce St
1st St
Locust St
Cedar St
Birch St
83
Walnut St
Elm St
Maple St
Linn St
Oak St
W 3rd St
E 3rd St
E 4th St
E 5th St
E 6th St
Poplar St
Chestnut St
W 6th St
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Contaminants

PCE (Tetrachloroethylene):

- A man-made chemical that is widely used for dry cleaning clothes
- It evaporates easily into the air
- a colorless liquid with a mild, chloroform-like odor - has a sharp, sweet odor

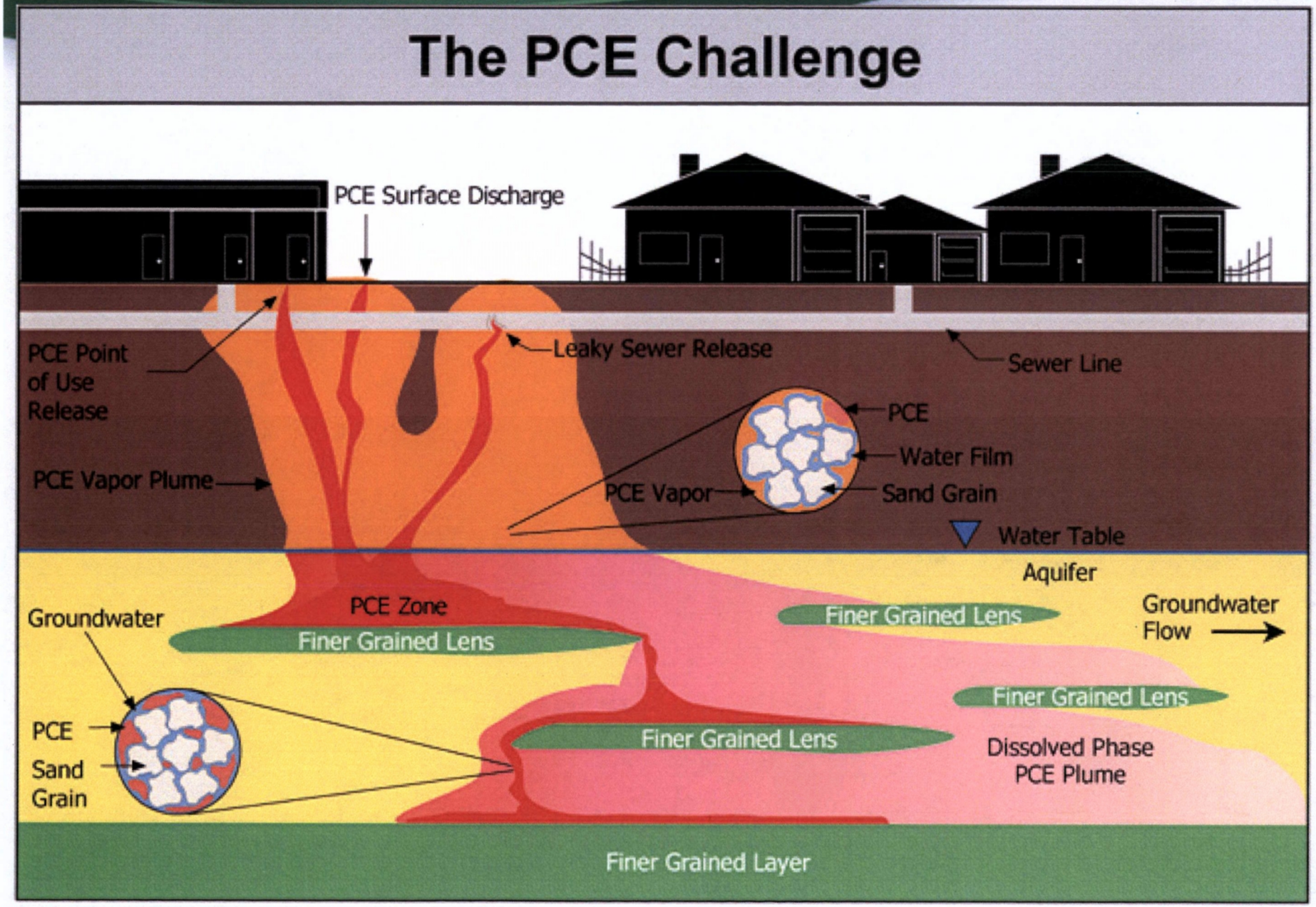
TCE (Trichloroethylene):

- Remove grease from fabricated metal parts and in the production of some textiles.
- PCE degrades to TCE under certain circumstances
- A colorless or blue liquid with a chloroform-like odor - has a sharp, sweet odor

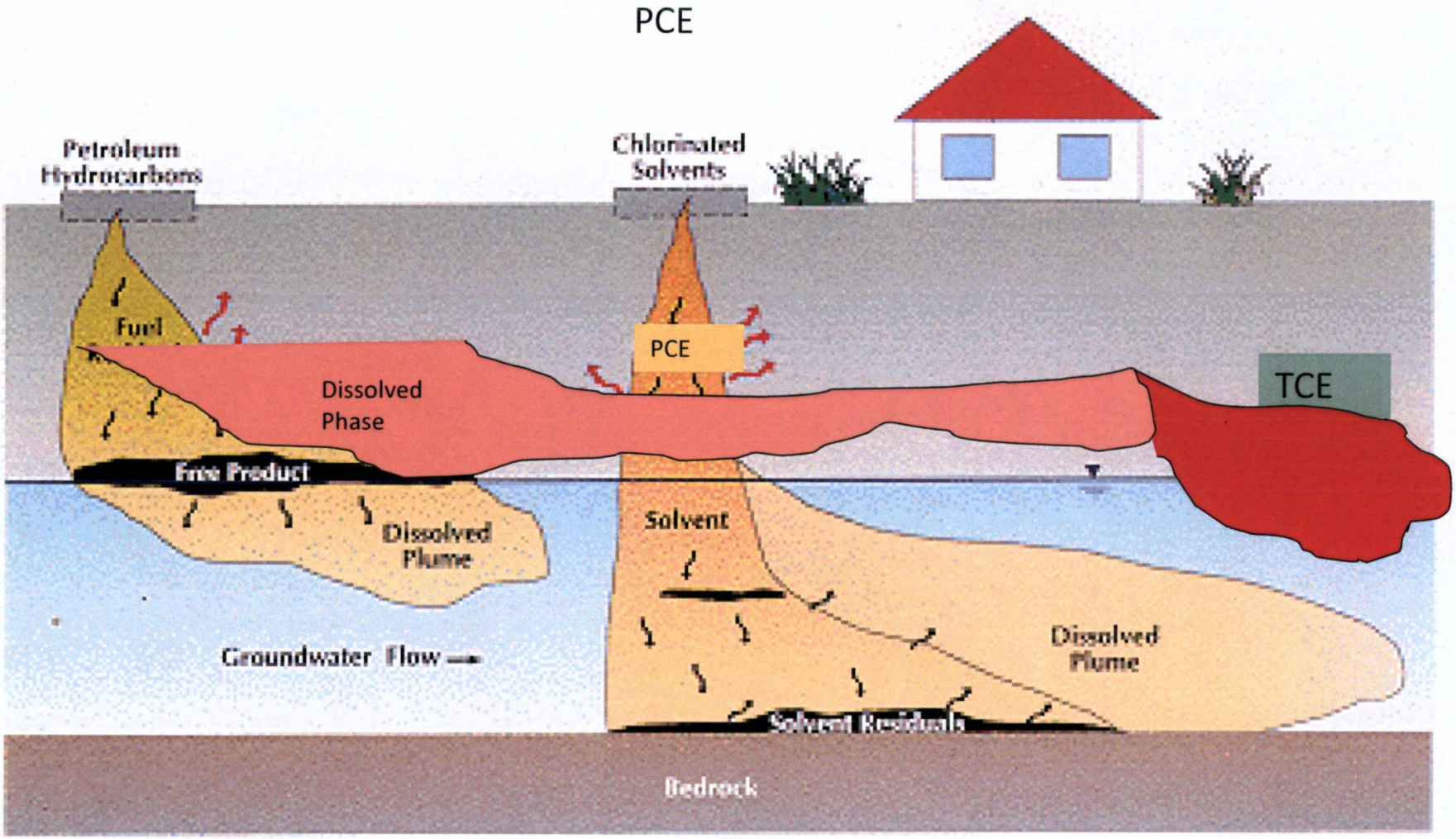
For more information about these chemicals go to:

http://water.epa.gov/drink/contaminants/basicinformation/

The PCE Challenge



PCE Converts to TCE



Health Effects of PCE

Cancer Risk

PCE is classified by U.S. EPA as "likely to be carcinogenic" to humans

Cancers associated with PCE exposure: bladder, non-Hodgkin's lymphoma and multiple myeloma in human populations

Noncancer Health Effects

Long-term exposure from breathing air contaminated with PCE can result in neurological, kidney, liver, immunological, hematological, developmental, and reproductive effects

Health Effects of TCE

Cancer Risk

TCE is classified by U.S. EPA as "carcinogenic to humans"

Cancers associated with TCE exposure: kidney, non-Hodgkin's lymphoma, and liver in human populations

Noncancer Health Effects

Long-term exposure from breathing air contaminated with TCE can result in liver, kidney, neurological, reproductive, immunological, and developmental effects (fetal heart defects)

Why a Removal Action?

Analytical results from samples collected by the EPA indicate that hazardous substances have been released into the environment.

What does a Removal Action entail?

- Soil and groundwater sampling
  - Find source area(s)
  - Find the extent of the contamination in the soil and groundwater
  - Determine if contamination is affecting any other receptors – for example drinking water


7720DT
Geoprobe

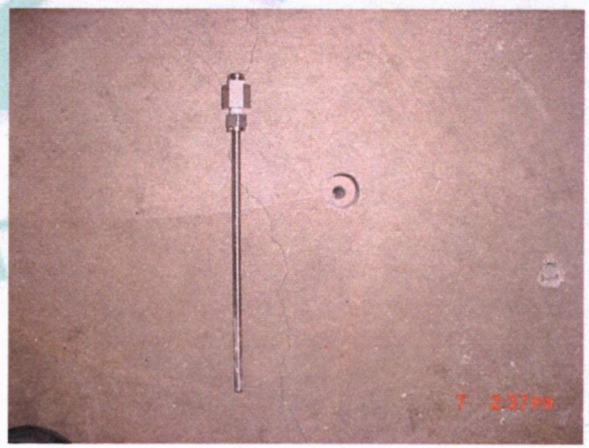

Geoprobe

What does a Removal Action entail?

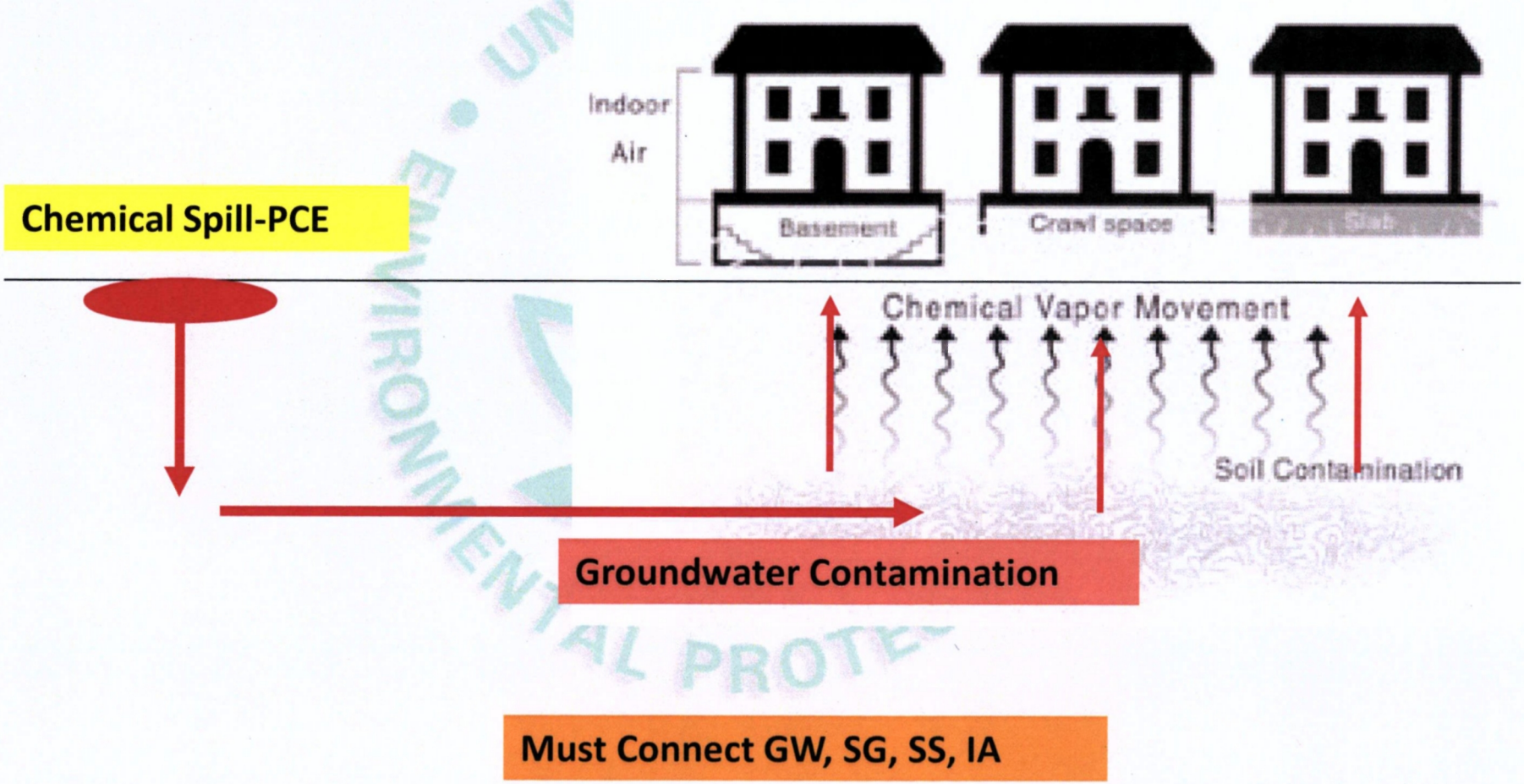
- Sub-slab soil gas and indoor air sampling

- Installation of vapor mitigation systems in residential homes and businesses where PCE and/or TCE exceed the removal action levels for soil gas contaminants

Sub Slab and Indoor Air Sampling



What is Vapor Intrusion?



Vapor Abatement System Installation

Radius of Influence Testing

Radius of Influence testing = 96% success rate on initial installation at the Behr Site

Success = 30 & 90 day samples < IA screening level

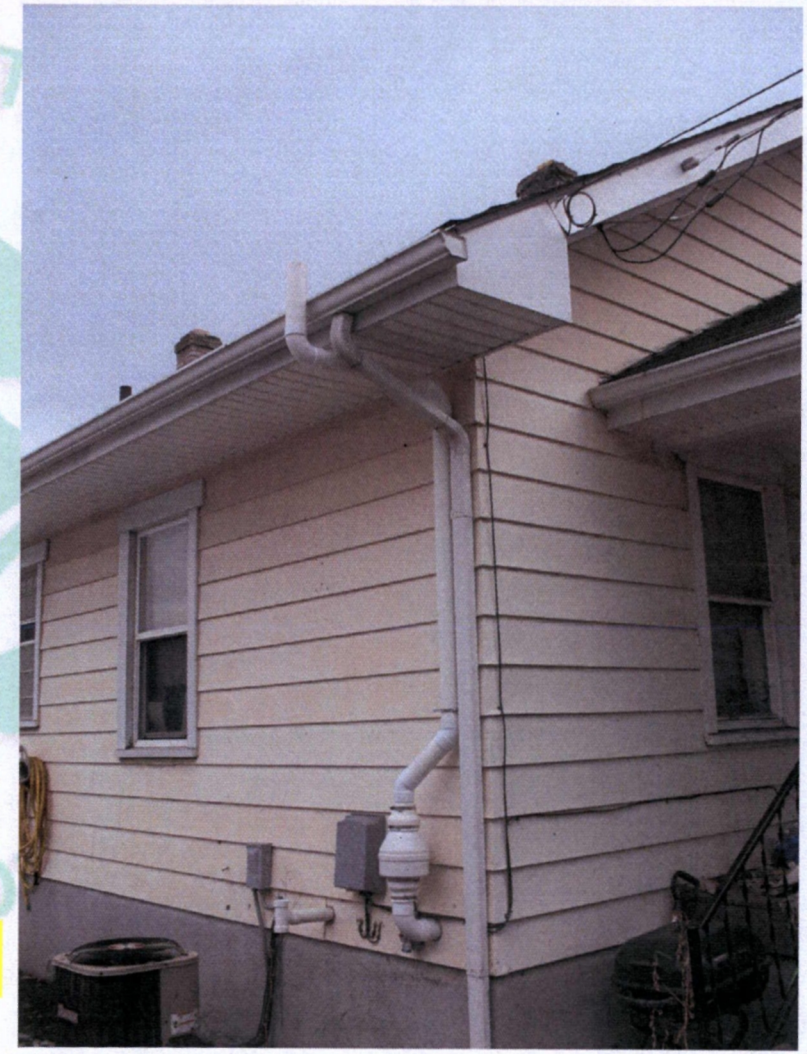
Vapor Abatement System Installation

Extraction Pipe into Slab

Based on radius of influence testing, multiple extraction points may be necessary
Note: Looking for entire slab to be under vacuum

Vapor Abatement System Installation

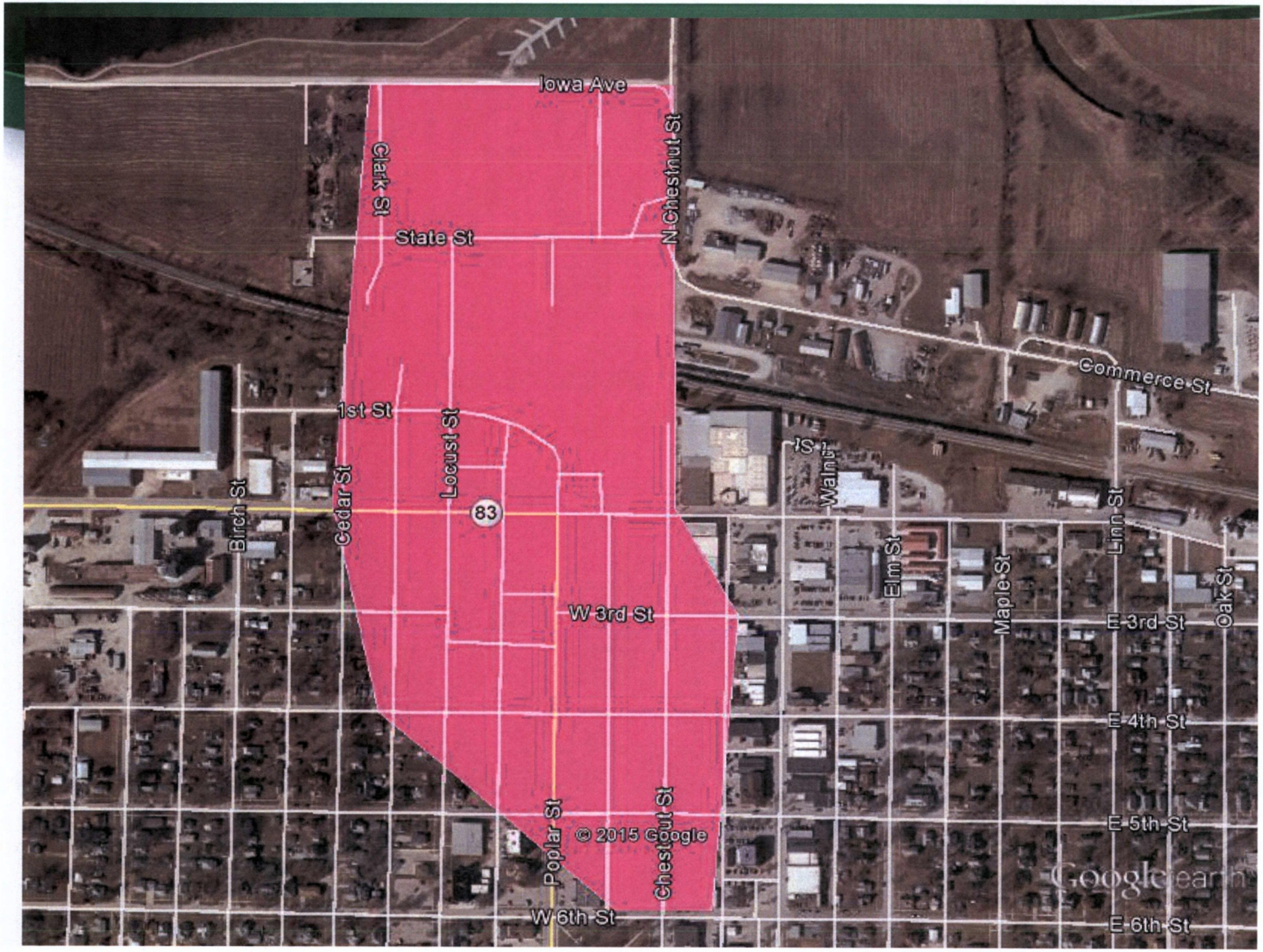
Outside Fan and Vent



Per local code, vent above highest window

Vapor Abatement System Installation

Outside Fan and Vent


Iowa Ave
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Linn St
Oak St
W 3rd St
E 3rd St
E 4th St
E 5th St
E 6th St
Poplar St
Chestnut St
W 6th St
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Your Chance to be Heard

EPA's Community Involvement Program

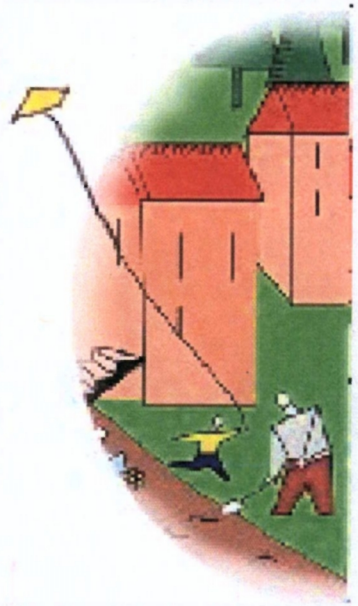
What is Community Involvement?

- Individuals potentially affected by a site have a voice in the cleanup process.

- EPA's Regional staff help communities get involved by providing:
  - Educational materials
  - Outreach activities
  - Site information
  - Training
  - Technical assistance
  - Other support

EPA's Community Involvement Goals

- Keep you informed in the cleanup process.
- Provide opportunities for you to comment and provide input.
- Resolve community issues related to the site.



Community Involvement Programs

- Technical Assistance Services for Communities (TASC)
- Meet with community to explain site information
- Interpret and explain health-related information
- Technical document review and interpretation
- Facilitate meetings

Ways the Public can Get Involved

- Attend public meetings and hearings
- Participate in community information sessions
- Visit local information repository sites
- Contact your local Community Engagement Specialist and/or Site Manager

Contact Information

- For questions or additional information, please contact:

- Pamela Houston
- Community Involvement Coordinator
- 1-800-223-0425
- Houston.pamela@epa.gov

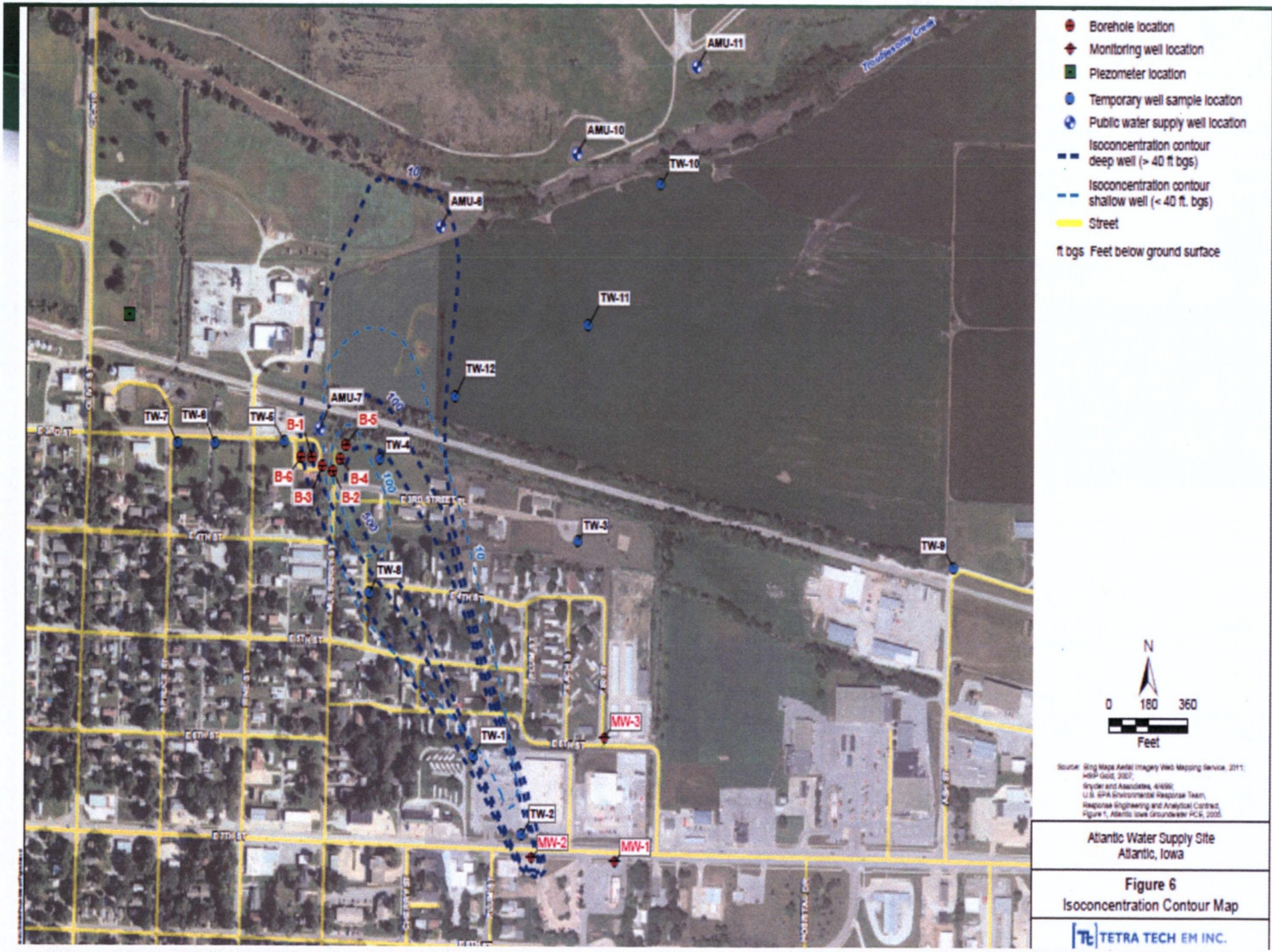
ATSDR

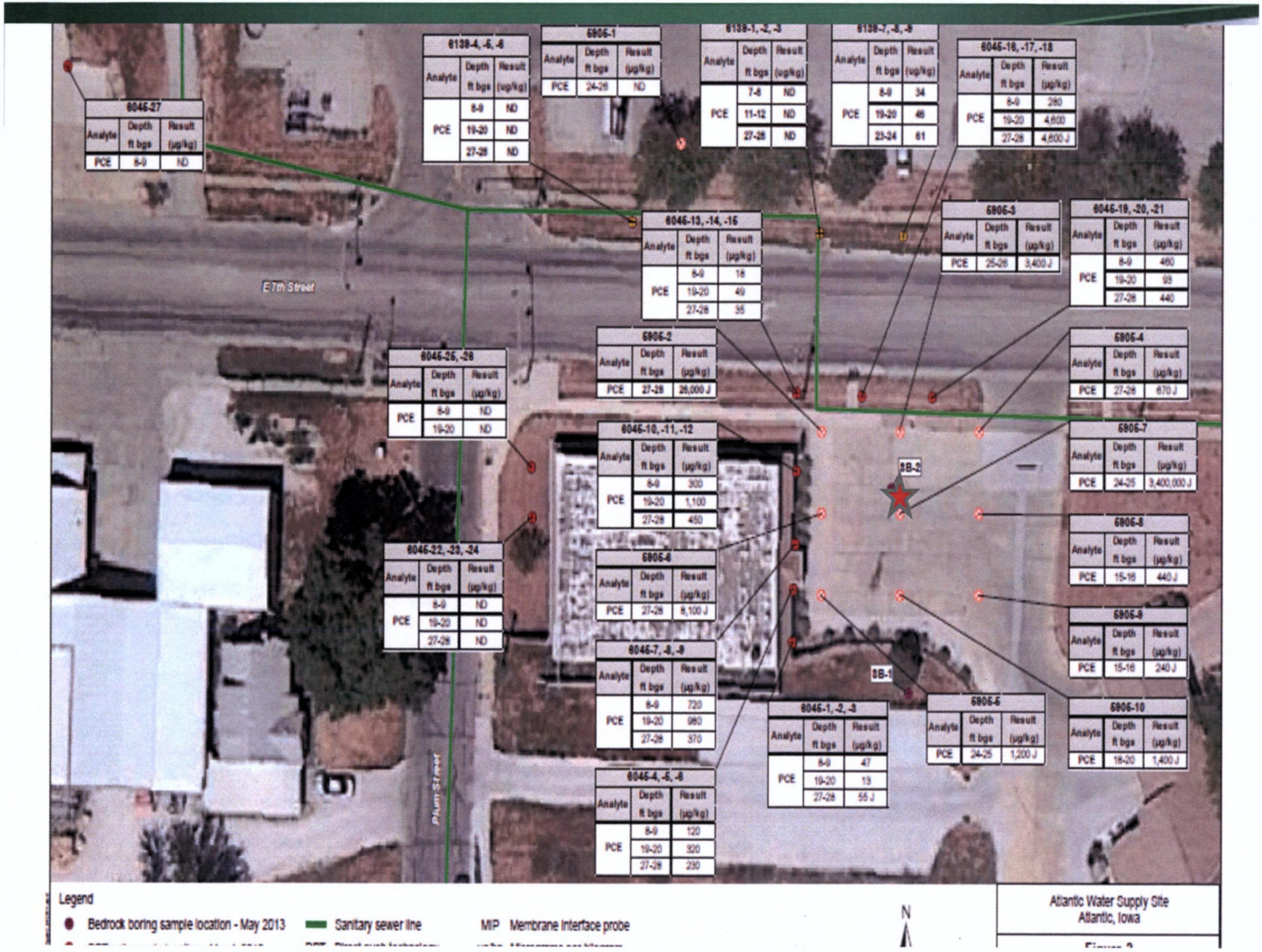
- The Agency for Toxic Substances and Disease Registry (ATSDR) is a non-regulatory federal public health agency based in Atlanta, Georgia.

- ATSDR's Mission is to serve the public by using the most current science, responding to community health concerns, and providing health education.

- Health Questions?

Erin Harman, REHS
LCDR U.S. Public Health Service
ATSDR Region 7 Representative
(913) 551-1311


Borehole location
Monitoring well location
Piezometer location
Temporary well sample location
Public water supply well location
Isoconcentration contour deep well (> 40 ft bgs)
Isoconcentration contour shallow well (< 40 ft. bgs)
Street
ft bgs Feet below ground surface
AMU-11
AMU-10
TW-10
AMU-6
TW-11
TW-12
AMU-7
TW-7
TW-8
TW-5
B-1
B-5
TW-4
B-6
B-4
B-3
B-2
TW-3
TW-9
TW-8
MW-3
TW-1
TW-2
MW-2
MW-1
10
100
100
100
10
N
0
180
360
Feet
Source: Bing Maps Aerial Imagery Web Mapping Service, 2011; HBP GIS, 2007; Bryder and Associates, 4/4/99; U.S. EPA Environmental Response Team, Response Engineering and Analytical Contract, Figure 1, Atlantic Iowa Groundwater PCB, 2000.
Atlantic Water Supply Site
Atlantic, Iowa
Figure 6
Isoconcentration Contour Map
TETRA TECH EM INC.


6046-27
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | ND
6138-4, -5, -8
Analyte | Depth ft bgs | Result (ug/kg)
PCE | 8-9 | ND
PCE | 19-20 | ND
PCE | 27-28 | ND
6806-1
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 24-28 | ND
6138-1, -2, -3
Analyte | Depth ft bgs | Result (ug/kg)
PCE | 7-8 | ND
PCE | 11-12 | ND
PCE | 27-28 | ND
6138-7, -8, -9
Analyte | Depth ft bgs | Result (ug/kg)
PCE | 8-9 | 34
PCE | 19-20 | 46
PCE | 23-24 | 61
6046-16, -17, -18
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 280
PCE | 19-20 | 4,600
PCE | 27-28 | 4,600 J
6806-3
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 25-26 | 3,400 J
6046-19, -20, -21
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 460
PCE | 19-20 | 93
PCE | 27-28 | 440
6046-13, -14, -15
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 18
PCE | 19-20 | 49
PCE | 27-28 | 35
E 7th Street
6806-2
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 27-28 | 26,000 J
6806-4
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 27-28 | 670 J
6046-25, -28
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | ND
PCE | 19-20 | ND
6046-10, -11, -12
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 300
PCE | 19-20 | 1,100
PCE | 27-28 | 450
SB-2
6806-7
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 24-25 | 3,400,000 J
6806-8
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 15-16 | 440 J
6806-9
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 15-16 | 240 J
6046-22, -23, -24
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | ND
PCE | 19-20 | ND
PCE | 27-28 | ND
6806-8
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 27-28 | 8,100 J
6046-7, -8, -9
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 720
PCE | 19-20 | 980
PCE | 27-28 | 370
SB-1
6046-1, -2, -3
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 47
PCE | 19-20 | 13
PCE | 27-28 | 55 J
6806-5
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 24-25 | 1,200 J
6806-10
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 18-20 | 1,400 J
6046-4, -5, -8
Analyte | Depth ft bgs | Result (µg/kg)
PCE | 8-9 | 120
PCE | 19-20 | 320
PCE | 27-28 | 230
Plum Street
Legend
Bedrock boring sample location - May 2013
Sanitary sewer line
MIP Membrane interface probe
N
Atlantic Water Supply Site
Atlantic, Iowa